The African *Zoothera* thrushes—identification, distribution and some problems with classification

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L'africain muguet *Zoothera*, qui présente un défi aux taxonomistes et à l'observateur de terrain, montre les charactéristiques possibles d'une ancienne famille existante. Ils ont restreint leur répartition dans les blocs restants de la forêt, et plusieurs sont vulnérables, habitant dans des sites détruits et répertorier comme menacé et prémenacé. La majorité des signes aperçus, montrent qu'ils ont un ancêtre commun et qu'ils sont clairement liérs, certains d'entre eux sont peut être plus directement liérs que les précédents ou dans les données de la dernière classifications faite—ceux la'ont été examinés en détail, avec une réévaluation de la position du *Z. oberlaenderi* qui les considérait comme une espèce complète, avec une examination d'une race extrèmement simulaire du *Z. princei* et *Z. camaronensis* qui avait lieu dans une partie d'Afrique centrale, mais on a très peu de connaissances. La spéciation de l'ensemble de l'orange Africain *Zoothera* est discuté et comparé au *Z. citrina* des terres du sud et sudest d'Asie.

In common with many other rainforest dwellers, we know comparatively little of the ecology, life-histories or relationships of the African species of *Zoothera* ground-thrushes. Some taxonomists have argued that it is a matter of speculation as to whether they correctly belong within thè genus or should be placed in *Turdus* or in a more distinctly homogenous grouping of their own. Collectively, the *Zoothera* thrushes are a primitive group which ranges (according to the most recent classification[5]) from the Afrotropics across Asia to Indonesia, the Philippines, Japan, Micronesia and Australia. Two further species—in North and Central America—are also included within the current grouping but both have been proposed (or to a limited extent are currently recognised) as monotypic genera (*Ixoreus*—Varied Thrush and *Ridgwayia*—Aztec Thrush). Since the *Zoothera* are, in terms of species composition, distributed almost equally through the Old World tropics it is difficult to pinpoint the origins of the genus but it is most probably south-east Asia (east to about Wallacea), since this region currently supports 14 species. The bridge to the New World is unclear, the intervening links having disappeared, or has never existed as the two New World species have no (either living or recently extinct) close relatives. Links and lineage of the African species are equally unclear but similarities between some of those species still extant (Spotted Ground-Thrush *Z. guttata* and Spot-winged Thrush *Z. spiloptera*) suggests that the family may have existed before the continents of Africa and Asia parted.

The genus *Zoothera* currently comprises c36 species all of which are characterised by the distinctive pattern of white underwing-coverts with blackish tips contrasting against the white bases to the secondaries and inner primaries—known previously as the geocichline underwing pattern, hence an earlier name for the genus—*Geocichla*). This underwing pattern reaches its most developed form in White's Thrush *Z. dauma*. In addition they have generally strong or stout, pale coloured legs and feet, and comparatively short or rounded tails; the African species also have white spots at the tips of the wing-coverts. Since most are sedentary it follows that they have fairly short, although not necessarily rounded, wings. Almost all are equally characterised by being shy, secretive, easily overlooked forest-dwelling birds, many of which have little or no song and, of those that do, only one or two are comparable to the musically accomplished songsters that we have come to associate with the *Turdus* (or even more so the extremely adept vocal powers of *Catharus*) genus of thrushes.

Another distinctive feature of the genus *Zoothera* is their relative rarity or sparsity of distribution; very few are regularly encountered even by experienced ornithologists and at least two, both non-African, have either not been seen for some time (Everett's *Z. everetti*) or only a very few times (Guadalcanal *Z. turipavae*); additionally New Britain Thrush *Z. talaseae* of which there are only a handful of specimens, has never been seen in the field by ornithologists. This apparent inability to adapt to habitats other than mature forest is characteristic of a primitive family which has an exact or specific habitat niche or requirement.

Turdus thrushes, by contrast, have successfully adapted from forest birds to a wide range of habitats and, except for the polar regions, have a truly Pan-

continental distribution. More specifically they are (although not entirely so) more arboreal than the ground-thrushes and have more uniform plumage patterns which range from entirely black or brown to dark above and paler below—the latter often accompanied by orange or reddish, a uniform or otherwise unremarkable underwing pattern and slightly longer tails. Vocally they represent one of the most advanced families of songbirds and several species are widely recognised as being highly accomplished singers; moreover they are also known, by even the most sedentary of urban humans who have no other contact with nature, as harbingers of seasonal change by the initiation or curtailment of their songs.

Within Africa the *Zoothera* thrushes are widespread south of the Sahara but confined to evergreen forests, both lowland and montane, with a centre of distribution based on the Equatorial forests of the eastern Democratic Republic of the Congo (formerly Zaïre) and western Uganda. Examination of the known range of plumages demonstrates that all, perhaps with the exception of Spotted Ground-Thrush, are closely related and undoubtedly descended from a common ancestor. Moreover the limited range of differing morphological characters exhibited by the different taxa suggests divergence is fairly recent (within the last 10,000–100,000 years). However, whilst there are recognisable differences between the varying taxa the degree of divergence may not yet have attained a stage where we can be certain of full species status in all cases. Indeed some of those forms currently considered to be full species may, on closer examination, have advanced no further than the subspecific level.

The classification of the African *Zoothera* thrushes used here follows that in *Birds of Africa* which is

- Abyssinian Ground-Thrush *Z. piaggiae* (including *hadii*, *tanganjicae*, *kilimensis* and *rowei* and *ruwenzori*)
- Orange Ground-Thrush *Z. gurneyi* (including *otomitra*, *chuka*, *raineyi* and *disruptans*)
- Crossley's Ground-Thrush *Z. crossleyi* (including *pilettei*)
- Oberlaender's Ground-Thrush *Z. oberlaenderi*
- Black-eared Ground-Thrush *Z. camaronensis* (including *graueri* and *kibalensis*).
- Grey Ground-Thrush *Z. princei* (including *batesi*)
- Spotted Ground-Thrush *Z. guttata* (including *maxis*, *fischeri*, *belcheri* and *lippensi*)

Of these, Abyssinian, Orange and Spotted are relatively widespread in both East and southern Africa although it must be reiterated that their distributions are, of course, restricted to remnant montane forest blocks. Crossley's, Grey and Black-eared are principally West African in distribution, although all three have races which occur in Central Africa; Oberlaender's (the most recently described African *Zoothera*) is restricted to the Albertine Rift forests.

Identification of the African *Zootheras*

With the exception of *Z. guttata*, all of these taxa are extremely similar, some are particularly alike whilst others show more widely divergent characters. All of these (again with the exception of *Z. guttata*) are predominantly orange on the head, face and underparts except the belly and undertail which is white, the upperparts (which also includes the head in some) are variably olive-brown to brown or russet-brown, the tips of the lesser- and greater-coverts have bold white spots at the tips with black to blackish olive bases and the tail is deep or rust-brown. The bills of all (except *Z. guttata*) are uniformly black and the legs pale or fleshy white.

Within this basic pattern there is a degree of variation by which the individual taxa differ. Abyssinian *Z. piaggiae* is characterised by a deep or rich orange on the head and face extending to the crown with a broad white eye-ring, the cheeks, ear-coverts and hindcrown to the nape is brownish orange becoming more olive towards the nape; *Z. p. tanganjicae* is very similar but has the orange on the head deeper or more rufous in tone and this extends across the entire face, crown and nape.

Oberlaender's is also very similar to both the nominate and *tanganjicae* races of Abyssinian, particularly the latter, but is slightly smaller in overall proportions, the head and face are more rufous-orange and it has a diffuse or ill-defined black mark through the eye (interrupting the white eye-ring); the mantle, back and scapulars are darker rust or orange-rufous; the songs of Oberlaender's and *tanganjicae* also differ.

In Crossley's Ground-Thrush the head is deep or dark rufous-orange with a small or reduced eye-ring, the sides of the lower forehead are a pale or light orange-buff but the lores, cheeks and forward ear-coverts are black and, to a lesser extent, the sides of the chin and throat are also tipped black; the olive-brown upperparts are also slightly darker than in Abyssinian and Oberlaender's. To some extent the race *pilettei* of Crossley's is intermediate in characters between this species and Orange Ground-Thrush since it has the face, upper and underparts of Crossley's except that the black extends more fully onto the lower cheeks and across the ear-coverts; the upper forehead, crown and nape is closer to the

plumage of Orange Ground-Thrush which is olive-brown merging across the nape with the rest of the upperparts. Orange Ground-Thrush has the head, cheeks, ear-coverts and centre of forehead to nape dark olive (contrasting with the paler brown mantle and back) but not the sides of the forehead and chin, throat and sides of the neck. As a cautionary note it is essential to note that many of these features are only visible or appreciable in the hand as many of these birds inhabit the dark or poorly lit ground strata of forests.

Black-eared Ground-Thrush has russet-olive brown upperparts (from the forehead back), the face is pale orange-buff with black bars through the eye across the cheeks and rear ear-coverts, and generally duller orange underparts. The race *graueri* is slightly darker or browner on head and upperparts, and has a paler or lighter buff face, the breast and flanks are also duller or tinged browner, and the centre of the breast has a number of broad streaks. The race *kibalensis* is little-known (only two specimens but is otherwise unknown in life): it appears to be intermediate between nominate *camaronensis* and *graueri* but with more extensive rufous-orange on the breast, belly and flanks with the lower belly and undertail whitish.

Finally, Grey Ground-Thrush, as its name implies, is greyer or more grey-brown on the head and upperparts becoming rufous on the scapulars and rump to tail, the base colour of the face is whitish but has the black bars of *camaronensis* through the eye and at the rear of the ear-coverts, the chin and throat are whitish becoming pale orange overlain with greyish on the breast and flanks, and some individuals are more predominantly orange than others. The breast is noticeably, or at least visibly, streaked. The race *batesi* is similar or slightly more olive-brown with less, or no, grey on the upperparts, the basal colour of the face is more buffish white, the throat and breast are tinged browner and with finer, paler or more diffuse breast streaking. *Z. c. graueri* and *batesi* are extremely similar, differing principally in the forehead and crown colour—dark brown in *graueri* and russet-brown in *batesi*; the rest of the upperparts are slightly darker brown in *graueri* and the underparts are almost alike, but perhaps slightly warmer or tinged tawny orange in *graueri* which has several dark central breast streaks (virtually absent in most *batesi*). The lower mandible of *graueri* is all dark or blackish brown, while that of *batesi* is noticeably pale or horn coloured, especially toward the base and similar to nominate *princei*. The wing of *graueri* is shorter on average (with marginal overlap), measuring 95–105 mm (*graueri*) to 101–111 mm (*batesi*).

The exception to most of the above, Spotted Ground-Thrush, with heavy spotting on the underparts, pale brown head and upperparts and pale or whitish tips to the brown tail shares very few of the characteristics of the other African *Zoothera* species. In fact, Spotted has closer similarities to another African thrush—Groundscraper Thrush *Psophocichla litsitpsirupa*—currently considered to constitute a monotypic genus. However, the differences between *Psophocichla* and *Turdus* are not especially great and many authorities consider that the two are synonymous. More specifically, Spotted shows closer similarities to Spot-winged Thrush *Z. spiloptera* of Sri Lanka but without comparison of DNA sequence profiles its exact relationship will not be any clearer.

The taxonomic classification and status of *Z. p. tanganjicae* (*including Z.p. williamsi*), *Z. p. batesi* / *Z. c. graueri*; *Z. oberlaenderi* and *Z. c. kibalensis*

The current grouping of these species in the present arrangement disguises several taxonomic anomalies which have yet to be fully or satisfactorily resolved.

1. Within Abyssinian Ground-Thrush the race *tanganjicae*—Kivu Ground-Thrush—has been proposed as a valid species in its own right[11] largely on the basis of the plumage differences described above. This corrected an earlier placing in Peters' checklist[10] that *tanganjicae* was a synonym for *piaggiae*. However, in their review of African species, Dowsett & Dowsett-Lemaire[4] reverse this and treat it as conspecific within *piaggiae* as the differences between the nominate race and *tanganjicae*, principally the head to nape colour tones and the wing to tail ratio, are no greater than that elsewhere within the species eg between *rowei* and *piaggiae*. Furthermore, the claimed altitudinal separation is also based on limited evidence and requires confirmation that the two breeding populations are indeed completely allopatric. In addition to promoting *tanganjicae* to species status, Prigogine[13] subsequently proposed that birds in the western Ruwenzori Mountains merited specific status as *ruwenzorii*. *Birds of Africa*[17] did not follow these suggestions (*ruwenzorii* and *tanganjicae* were considered insufficiently distant from *piaggiae* to warrant specific status). *Birds of Africa*[17] gives the range of nominate *piaggiae* as central and south-west Ethiopia, south-east Sudan, north and west Kenya, eastern Uganda, the Rwenzoris (Zaïre / Uganda) and the

Itombwe and Kahuzi Mountains of eastern Zaïre (now Democratic Republic of the Congo) all above 1,900 m. The range of *tanganjicae* lies south-east of this in south-west Uganda, Rwanda and northern Burundi but overlaps with *piaggiae* in the Itombwe and Kahuzi Mountains of the eastern Democratic Republic of the Congo but is apparently separated altitudinally as it generally occurs below 2,040 m.

The recognition of *ruwenzorii* as subspecifically distinct, as proposed by Prigogine[13], would give rise to an almost unique distribution of two races on the same mountain range, and a third in the adjacent montane forest block. The situation is further confused by Friedmann & Williams[6] who, apparently unaware of the separation of *tanganjicae* (described in 1914) considered that birds occurring in the Ruwenzoris, the Impenetrable Forest and Mt. Muhavura, south-west Uganda were all referable to a new subspecies; *williamsi*. Whilst this may have been an oversight—as the birds they describe are now widely accepted as being *tanganjicae*—it is interesting to note that they describe an adult female collected in the Ruwenzoris at Nyabitaba, at 2,575 m. This is c500 m above the upper limit given for *tanganjicae* by Urban *et al*[17]. More recent information from the Impenetrable Forest (A Twinomujuni pers comm) suggests that whilst *tanganjicae* breeds down to c1,600 m it moves to c2,500 m or higher in the non-breeding season. The question that remains is how closely related are these two taxa and just how far have they diverged in terms of plumage and voice = mate attraction, to be considered specifically distinct.

2. In addition to the similarities of *tanganjicae* to *piaggiae*, there is yet another species—Oberlaender's Ground-Thrush—within the same area with remarkably similar characters to both of these. Oberlaender's and *tanganjicae* occur in the same forests in south-west Uganda but are also apparently separated altitudinally, with Oberlaender's occurring more frequently in lowland forests. Oberlaender's has a significant claim to full species status in that it has one of the finest songs of any of the thrushes and among the *Zoothera* is a particularly accomplished singer, recalling some of the sweet and melodious warbling tones of the Eurasian Blackbird *Turdus merula*. The plumage of Oberlaender's is within the range of variation shown by other subspecies of *piaggiae* and were it not for the fine song probably would not merit species status. The distribution of Oberlaender's has apparently never been extensive and, as with many lowland forest species, it is particularly vulnerable to the exigencies of habitat change. It may now be extirpated from some of the forests within its restricted range ie Bwamba Forest, western Uganda since much of it was destroyed under the re-settlement of native peoples during the Amin regime of the 1970s, and there are no recent records. The precise relationship of Oberlaender's to nominate *piaggiae* and *tanganjicae* is untested; *tanganjicae* appears unresponsive to playback of songs of Oberlaender's and the two taxa are largely allopatric. As such they are clearly diverging from each other but whether they are completely sympatric has yet to be determined.

3. *Z.c. kibalensis* is known only from two male specimens, collected by Glen and Williams at 1,525 m in the Kibale Forest, south-west Uganda in December 1966. Friedmann & Williams[6] considered that these birds were related to *Z. camaronensis graueri* but subsequently Prigogine[13] described them as a new species—*Z. kibalensis* which subsequently became known as Prigogine's Ground-Thrush. Clearly similar to both *Z. camaronensis* and *Z. princei* (especially of the race *batesi*), several authors have considered the specimens to be hybrids between the two taxa. However, as Prigogine[13] was quick to note, Hall & Moreau[8] considered that these two species were not closely related. Nevertheless, in view of the lack of any other records of the species (especially in a relatively well-watched forest reserve such as Kibale), *kibalensis* is best regarded as a race of *Z. camaronensis* as the differences in size and plumage are no greater than the subspecific level of *graueri* which it complements.

4. *Z. princei batesi* / *Z. camaronensis graueri*. The race *batesi* of Grey Ground-Thrush was first described by Bowdler Sharpe in 1905 from a specimen collected by Bates at Efulen, Cameroon. In 1914, Sassi[16] described the race *graueri* from a specimen collected at Moera, west of the Semliki River in what was formerly the north-eastern Congo (subsequently Zaïre) and assumed that it was also a race of Grey Ground-Thrush. This treatment was followed by Mackworth-Praed & Grant[9] who gave the ranges of *batesi* as "Southern Cameroon to the Semliki" and that for *graueri* as "northeastern Congo almost to the Semliki" (the river valley connecting Lake Edward and Lake Albert). However, Chapin[2], Peters[10] and White[18] considered *graueri* synonymous with *batesi*; Urban *et al*[17] treat both under the respective species but make no reference to their similarity. They are, in fact, so similar that the first records of birds collected in Uganda in 1963 and 1966 were considered by their collectors[7] and Britton[1] to be a race of Black-eared

Ground-Thrush (neither Prigogine or Britton considered these African thrushes to be *Zoothera*). The collectors, in discussing the records in Bugoma and Budongo, appear to have arrived at the conclusion that the birds were *batesi* and, although acknowledging that there were no previous records of *batesi* in Uganda, did not substantiate their own records. Although Prigogine[11] maps the occurrence of *batesi* in Bugoma forest (possibly on the basis of the 1963 record, not published until 1966), it was not until 1992 that *batesi* was definitely recorded in the country[5]. Dranzoa[5] describes the observation of one bird, and subsequent collection of two birds in Bwamba forest, and the confusion concerning earlier records.

There are seven specimens of *graueri* from the central African part of its range in museum collections, five of these are from Budongo Forest and two from Bugoma, Uganda. Local guides at Budongo who are, not unsurprisingly, equally adept at identifying birds from calls and songs as well as sight records, regard it as an extremely rare bird with only one or two sightings in the last five years. This may indicate that it is not resident within these forests, however, occurrences of either are likely to be extremely few since *graueri* (in common with *batesi*) has no known song and appears to be entirely silent.

From our limited information on these two very scarce and elusive birds it is entirely possible that they may be morphs of each other and that *graueri* should be treated as a synonym of *batesi* (as proposed by Chapin[2], Peters[10] and White[18]). Until more information becomes available and the affinities of these taxa are established by DNA profiles they should perhaps be regarded as indeterminate. Moreover, future sightings should be described in detail and preferably accompanied by photographs and, wherever possible, blood samples.

By way of comparison, it is interesting to note that another member of the genus, Orange-headed Ground-Thrush *Z. citrina*, from parts of India and south-east Asia, displays an equally wide range of plumage variation, and is currently considered to consist of 12 subspecies. The head, face and underparts vary from pale to deep orange. In particular, a number of races display a similar face pattern (repeated in two other south-east Asian *Zoothera*) to that exhibited by Black-eared and Grey Ground-Thrushes, with broad black stripes through the eye and at the rear of the ear-coverts. However, despite showing this extent of geographical variation, all are considered to have diverged no further than the subspecific level. Compared to this, the levels of subspecific variations shown in the African representatives of the genus *Zoothera* suggest that a consistent approach has not always been applied. In view of this it is entirely possible that we will subsequently be forced to revise our approach to the number of *Zoothera* taxa within Africa.

Acknowledgements

I am grateful to John Ash for his comments and helpful suggestions on an earlier draft of this paper; Miourel Helps for translating some Prigogine papers; staff at the Natural History Museum, Tring, most notably Robert Prys-Jones, Effie Warr and Michael Walters who kindly permitted access to the collection and library; Kimball L. Garrett of the Natural History Museum of Los Angeles County (where the Friedman collection is housed) for information and photographs of the *kibalensis* specimens; and I am particularly indebted to Robert Kirk of A. & C. Black for permission to use the two plates by Clive Byers from the forthcoming *Thrushes: a Handbook of the thrushes of the world*.

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Plate 1 (page 22) clockwise from top left: Crossley's Ground-Thrush *Zoothera crossleyi crossleyi*; *Z. c. pilettei*; *Z. c. kibalensis*; Black-eared Ground-Thrush *Z. cameronensis* (juvenile); Grey Ground-Thrush *Z. p. batesi*; *Z. princei*; Black-eared Ground-Thrush *Z. c. graueri*; *Z. c. cameronensis* (male lower, female upper bird); Crossley's Ground-Thrush *Z. c. crossleyi*. (Clive Byers).

Plate 2 (page 23) clockwise from top left: Abyssinian Ground-Thrush *Z. piaggiae piaggiae*; *Z. piaggiae* (juvenile); *Z. p. tanganjicae*; Orange Ground-Thrush *Z. gurneyi gurneyi*; *Z. gurneyi* (juvenile); *Z. g. otomitra*; Oberlaender's Ground-Thrush *Z. oberlaenderi*; *Z. p. badii*. (Clive Byers).